US Army Corps of Engineers

HEADQUARTERS ENGINEERING & CONSTRUCTION NEWS

VOLUME III NUMBER 11 AUGUST 2001

AUGUST'S THEME:

Corps Water Management System (CWMS)

DWIGHT'S NOTES

The theme for this issue of E&C News, Corps Water Management System (CWMS), is timely. On 29 August 2001 CWMS passed a big hurdle when it received approval for deployment after clearing Milestone III in the LCMIS approval process. This approval is the culmination of five years of hard work (teamwork) between the Corps leaders in Hydraulics and Hydrology and the Corps experts in Corporate AIS. Congratulations to this great team! When briefed on this outcome, General Griffin, the Corps new Director of Civil Works, gave CWMS his unqualified support, telling us the Corps needs to embrace CWMS across the entire command. I need your commitment to do just that as CWMS is fielded systematically over the next year or so. I'm counting on your leadership.

August has been the Corps month for conferences. Within a three week period the Corps conducted its second Senior Leadership Conference under General Flowers, held its first Infrastructure Systems Conference ever and finished up with the annul Project Delivery Conference. All of these forums were first class learning events.

The theme of Senior Leaders Conference was "Achieving the Vision." The focus was moving the Corps forward as a learning organization. The conference was focused around the three fundamental pillars of the vision: People, Process, and Communications. One of the highlights of the conference was a presentation by Mr. Michael Grunwald reporter for the Washington Post. Mr. Grunwald strongly defended his series of articles highly critical of the Corps of Engineers. My takeaway was that we must manage our relationships with the press much better so that we don't project an image of wrongdoing. Four star General Keene, the Vice Chief of Staff of the Army, a lifelong New York Yankees fan (who through out the first pitch at a game in Yankee Stadium on the 225th birthday of the U.S. Army) gave a thought provoking speech about Army Transformation. Mr. Dom Izzo, Acting Assistant Secretary of the Army (Civil Works), a West Pointer, talked passionately about the history of the Army Corps of Engineers and the challenges we face in Civil Works today. The conference provided great insights into how other people see us and clearly highlighted the value of us becoming a learning organization. Our Chief was a terrific teacher throughout the conference.

The Infrastructure Systems Conference was held in Reno, Nevada, 13-16 August 2001. It was a "really big show", with 600 people from the Corps and other federal agencies, and 70 private sector vendor displays. The purpose of the conference was to promote learning between people in five engineering and construction disciplines associated with the infrastructure for the Corps military and civil works programs. I witnessed great teamwork by HQ, South Pacific Division and the Sacramento District organizing and hosting this breakthrough conference. The theme of the Conference was Maintaining Technical Competence in Engineering and Construction. After a first class opening

session in front of over 700 people we quickly got down to nitty gritty engineering and construction in more than 250 technical presentation covering: Electrical-Mechanical, Structural, Geotechnical, Concrete Materials, and Construction disciplines. Wow! "What a great day to be engineers".

The conference was an unqualified success. The depth and breadth of the subject matter and quality of the speakers was world-class. Attendees were awarded 1.6 CEUs to apply against their professional license renewal continuing education requirements. CEUs improved overall attendance as well as participation at technical sessions. Vendors provided a wealth of information on current services, materials and building systems available from the private sector. Overall, the conference was a superb learning experience. We're already thinking about how to make it better the next time.

Some of us got back together again the next week in Pittsburgh for the Project Delivery Team (PDT) Conference. Every major functional element of the Corps was there. I co-hosted the first session with Ms. Pat Rivers, Chief, Environmental Division at the headquarters. The PDT conference gets better every year. The speakers were thought provoking. The teamwork was outstanding. A highlight of the conference was a field trip to the construction area for the new Braddock Dam, which has received major positive press regarding its use of in-the-wet construction. Imagine a 300 foot section of dam "floating" up the Ohio River before it is sunk into place sans cofferdam! That's what Pittsburgh District is doing.

This week we're wrapping up the Dam Safety Peer Review and Hydraulics and Hydrology (H&H) competency studies. The Dam Safety Peer Review was conducted by outside experts over the last several months. They visited several divisions and project sites, interviewing hundreds of Corps employees along the way. In their briefing to General Griffin, they concluded that the Corps has excellent talent but overall, is slipping in its commitment to the dam safety program. More on this later once the team's final report is published. General Griffin was also briefed by Bill Branch, Chief Water Management in NWD, on the findings and recommendations of the special H&H competency review task force, which Bill so ably led. The team conducted a comprehensive survey which indicated that the Corps needs to shore up its H&H competency, especially in HQ, and needs to provide better entry, journeyman, and expert level training for us to remain the world leader in the H&H field. I think we'll see many of the team's recommendations adopted in whole or in part. What is clear from both these studies is that the Corps leadership cares very much about dam safety and H&H or else it wouldn't have asked for the analysis and recommendations to begin with. I'm optimistic that these studies will help us figure out ways that the Corps can continue as leaders (read that the best there is) in these critical arenas.

Lastly, E&C has collaborated with HQUSACE HR staff to develop a new draft Engineering Regulation on Professional Registration. The ER strongly encourages USACE employees to become registered and expands the requirements where registration becomes a "condition of employment" to qualify for certain positions. I invite you to review and comment on the draft ER. POC in E&C is Ray Navidi. Bottom line is if you're eligible to be registered and aren't don't put off any longer. The Corps values professional registration now more than ever. Leaders and managers show the way!

Best of luck as FY01 draws to a close.

ESSAYONS! Dwight

(Editors' note: If you want to share your thoughts with our readers regarding Dwight's Notes send an email to the E&C News editor (charles.pearre@usace.army.mil). A synopsis of your comments will be published in the next issue.)

ARTICLES

THIS PUBLICATION WILL BE ISSUED ON A MONTHLY BASIS AND DISTRIBUTED BY E-MAIL AND POSTED ON THE INTERNET AT HTTP://WWW.USACE.ARMY.MIL/INET/FUNCTIONS/CW/CECWE/NOTES. IF YOU WOULD LIKE TO CONTRIBUTE ARTICLES OR HAVE SUGGESTIONS FOR FUTURE ARTICLES, PLEASE CONTACT CHARLES PEARRE, CECW-EP, 202-761-4645.

Corps Water Management System (CWMS)

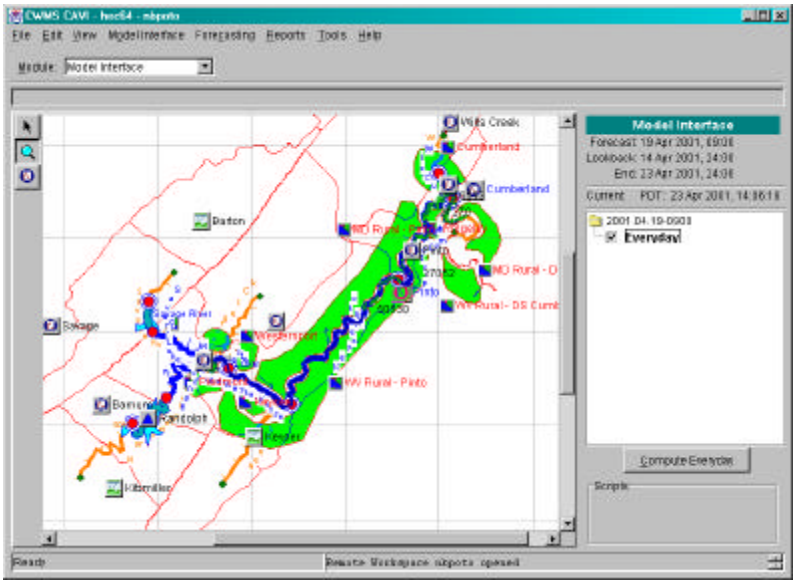
CWMS IS COMING SOON TO YOUR DISTRICT

If you haven't heard of CWMS, you will soon! CWMS (pronounced "swims") is the Corps Water Management System. It is the standardized USACE Automated Information System (AIS), which provides real-time decision support for water management in USACE. CWMS is an integrated suite of water resources software that represents a quantum leap in the AIS support of the critical water management mission.

USACE operates more than 700 Civil Works storage reservoir, lock and dam, and flow control structures. The water management mission of the Corps is to regulate river flow with these projects to provide national benefits of flood control, navigation, hydroelectric power generation, water supply, irrigation, erosion control, water quality, environmental enhancement, and other authorized purposes. CWMS provides tools to more effectively execute this mission.

CWMS was developed by the Hydrologic Engineering Center (HEC), and utilizes their industry-standard hydrologic engineering software. CWMS will provide a centrally supported, Corps-wide, standardized, reliable networked system of hardware and software that can be locally configured at the district, division, and HQUSACE level to meet the unique requirements of each office and user. CWMS integrates real-time data acquisition; database storage; flow forecasting of watershed runoff; reservoir operation decision support; river profile modeling; inundated area determination; impact/damage analysis; and information dissemination into a comprehensive suite of software. It incorporates state-of-the-art spatially distributed rainfall-runoff flow forecasting capabilities; rule based reservoir systems operation; steady and unsteady flow water surface profile analysis; event-by-event flow impact for damage, population, and structures. GIS analysis provides inundated area impacted with specific parcel and even structure information if available.

CWMS is highly graphic and interactive, being accessed and operated through a map-type interface from Personal Computers via the Control and Visualization Interface (CAVI). The system of software is 'active' in that it automatically monitors its own processes and health, reporting information as needed to system administrators, users and others. Scripting enables forecasting and other decision support analysis and CWMS operations to be set up by the user for subsequent routine and recurring automatic execution. Information produced by CWMS is made available to others in the Corps such as PAO, Emergency Operations, Planning, Corps partners, and the public via Web dissemination. Output products will be provided for access via EngLink.



In addition to real-time water control decision support, CWMS models will allow water managers and planners to more effectively plan, control, and evaluate operation of water control facilities. Potential uses of CWMS include:

- Emergency planning & response (including real-time activities);
- Project evaluation (new projects, alternative projects, modified regulation);
- Post-event analyses (benefits);
- Flood plain studies.

The benefits of CWMS include:

- Improved operation and support efficiency;
- Timely, accurate, and cost-effective information to Corps water managers and emergency operations staff, other agencies, and the public to ensure continued and future beneficial project operations;
- Improved navigation lock and dam operation, and increased and more accurate river status information to waterway users;
- More efficient power generation and more environmentally acceptable power operation;
- Optimization of reservoir storage operations for all water use purposes;
- Improved operations for recreation managers and the public;
- Enhanced project operations for fish and wildlife;
- Improved career opportunities for Corps water management staff through portability of expertise, and more standardized jobs in water management throughout the Corps.

CWMS is being deployed throughout USACE, starting with North Atlantic Division this summer. The other Divisions will follow, one-at-a-time, through the end of calendar year 2002. Following initial deployment, over the next several years, offices will continue to develop the watershed models that will complete the full functionality of CWMS and maximize its benefits.

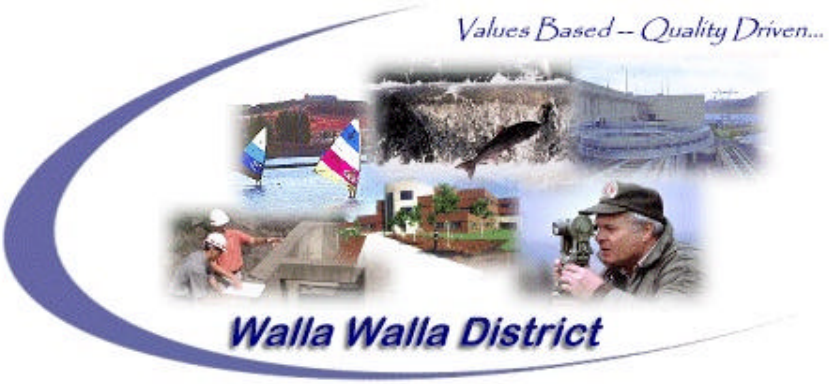
For more information, you can visit the CWMS website at: http://155.83.202.103/cwcinfo/cwc.html

POC: ROBERT BANK, CECW-EW, 202-761-4243

Return to Index of Articles

District of the Month

US Army Corps of Engineers®



Walla Walla District is one of five districts in the Corps' Northwestern Division, which is headquartered in Portland, Oregon. The District boundaries are generally the same as the watershed boundary of the Snake River drainage and includes approximately 107,000 square miles in six states: Washington, Oregon, Idaho, Wyoming and small parts of Nevada and Utah. From its beginnings on

November 1, 1948, the history of the Walla Walla District has been closely tied to the development of water resources for hydropower, flood control, navigation, recreation, and fish and wildlife on the Columbia and Snake Rivers.

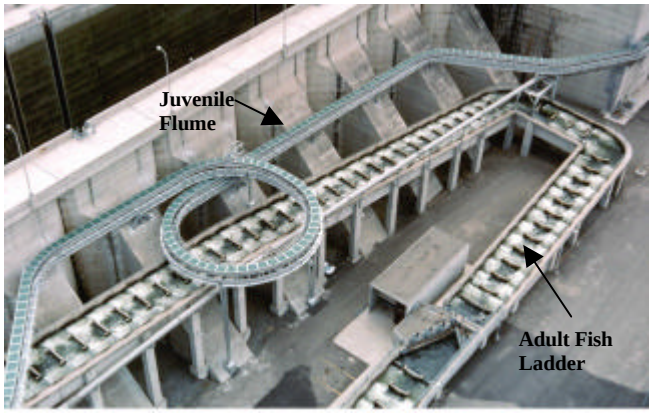
DAM DESIGN AND CONSTRUCTION -- Walla Walla District has designed and constructed dams for flood control, navigation and hydropower. They include Dworshak, Lucky Peak, Willow Creek, Mill Creek, Lower Granite, Little Goose, Lower Monumental, Ice Harbor and McNary Projects.

Dworshak Dam, located on the Clearwater River, Idaho, is the Corps highest concrete gravity dam at a maximum structural height of 718 feet, is the third tallest in the United States and the 21st highest dam in the world. The dam's crest length is 3,287 feet long and is the largest straight axis gravity dam in the North America. The project was completed in January 1973. Dworshak Dam is designed to fluctuate approximately 155 feet yearly for flood control. The lake length is 53.6 miles long and is the 16th-largest manmade reservoir in the United States at 3,454,000 acre-feet of storage.

The Corps' Lower Snake River Project, a $944 million multi-purpose development project, features four major lock and dams in southeastern Washington State. The project includes Ice Harbor, Lower Monumental, Little Goose, and Lower Granite Lock and Dam, and the Levee system and parkway at Lewiston Idaho. A series of four locks, which rank among the highest in the world (100-foot lift per lock), was designed to facilitate navigation through the 140-mile reach of the Lower Snake River. With the completion of the project the "Northwest Passage" sought by early explorers became a reality. The extending of the inland waterway 465 miles along the Columbia and Snake River from the Pacific Ocean to Lewiston, Idaho has made possible the substantial increases in commercial traffic and spurred the region's economic growth. It has been 25 years since the completion of the final dam, which includes Lower Granite Lock and Dam and the Lewiston Levee system. Hydroelectric power plants at the four dams have a present installed capacity of 3,488 megawatts. There are a total of 25 parks and marinas along the waterway. (For pertinent information on each of Walla Walla District's dams, check out our web site at http://www.nww.usace.army.mil/html/pub/pertdata/pdata.htm)

FISHERIES ENGINEERING -- Our expertise includes planning, designing, and constructing fish hatcheries and associated satellite acclimation facilities, and upstream and downstream fish passage, collection, and transportation facilities. The scientific research conducted has resulted in new and innovative designs to improve the survival rate of downstream migrating juvenile anadromous fish. Fishery experts throughout the West recognize the District's expertise in fisheries engineering.

FISH PASSAGE -- The Lower Snake River Projects were originally designed and constructed with adult fish passage facilities. These facilities include fish ladders with 100-foot vertical rise. To protect downstream migrating juvenile anadromous salmon and steelhead, juvenile fish passage facilities have since been designed, installed and are now in operation. A juvenile fish transportation program, begun in 1968, uses specially-equipped barges and tank trucks to carry migrating salmon and steelhead fingerlings around dams on their way down the Snake and Columbia Rivers. More than 24.5 million juvenile salmon were collected and more than 18.5 million of those were transported downstream in



1995. District activities to aid migrating fish are not limited to transportation programs. In recent years, the District has modified dam spillways to increase fish survivability and added fish screens to guide most migrating fish around turbine intakes. The photo above shows a traditional fish ladder, which allows adult fish to go over the dam and a flume to accommodate downstream migratory juveniles.

FISH HATCHERIES -- Since 1976, the Walla Walla District has constructed nine major fish hatcheries under the Lower Snake River Fish and Wildlife Compensation Plan to mitigate for fishery losses attributed to the construction of the four dams on the lower Snake River. The Clearwater Fish Hatchery at Ahsahka, Idaho, the ninth hatchery completed under the Compensation Plan, was dedicated on Aug. 22, 1992. In the states of Washington, Oregon, and Idaho, a multifaceted program of land acquisition to compensate for the losses of stream bank fishing access, upland game and other wildlife species, riparian habitat and hunting opportunities was authorized by the Water Resources Development Act of 1976 and modified, with some added features, by the Water Resources Development Act of 1986.

WATER QUALITY AND FISHERIES PROJECTS -- Water quality and fisheries improvements are very high priority for the Walla Walla District. Two recent district projects are highlighted in the following paragraphs.

SPILLWAY DEFLECTORS -- The Dissolved Gas Abatement Study (DGAS) initiated in 1994 has been a six-year effort conducted by a virtual team with members from two Northwest Division Engineer Districts (Portland and Walla Walla), ERDC (WES), private laboratories and several AE firms. The study examined potential operational and structural alternative methods for reducing total dissolved gas (TDG) super saturation produced by spillway operations on the eight U.S. Army Corps of Engineers' (Corps) dams on the lower Snake and Columbia Rivers. TDG contributes to a high mortality rate among juvenile anadromous fish. While the DGAS study was being conducted, several spin-off actions were recommended and implemented to take immediate advantage of reductions in TDG. One of these actions consisted of design and installation of spillway flow deflectors at Ice Harbor Lock and Dam.

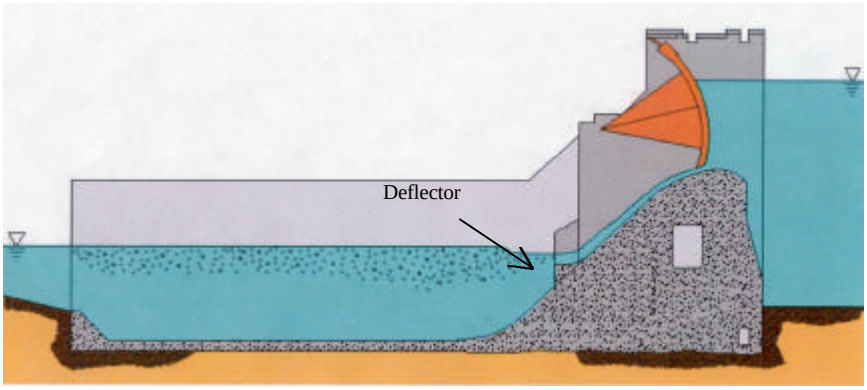
Ice Harbor is located 9.7 miles above the confluence of the Snake and Columbia Rivers. The main structures include the powerhouse, spillway and stilling basin, navigation lock, fish facilities, and concrete nonoverflow sections with rock-fill embankments on the north shore. An aerial photograph showing the general layout of Ice Harbor is shown in the photo, below. The Ice Harbor spillway has ten 50-foot-wide spillway bays. The spillway discharge through each bay is controlled by 50-foot-wide by 52.5-foot-high tainter gates. The design capacity of the spillway is 850,000 cfs, with a corresponding maximum pool

elevation of 446.4 feet (mean sea level). The energy of flow released through the spillway is dissipated by a hydraulic jump forced within a horizontal apron-type stilling basin. The basin floor elevation is 304.0 fmsl and the overall length of the basin is 168 feet.

The effectiveness of spillway flow deflectors is dependent on the geometry of the deflector, target discharge, and deflector submergence (tailwater elevation minus deflector elevation). Performance is optimized when the elevation of the deflector (associated with a design discharge and tailwater elevation) is set to provide a smooth skimming flow. See drawing of Conventional Spillway with Deflectors below. The deflector lessens spill depth.

Spillway Sectional and general models of Ice Harbor were constructed and tested at WES (now ERDC – Engineering Research and Design Center.) Testing resulted in the selection of 12.5-foot-long deflectors with 15-foot radius transitions. The deflector length was optimized to provide a stable deflected jet for the design flow range (6,000 and 14,000 cfs per bay), while allowing the deflector to be overridden during the spillway design flood. This design maintains the stilling basin's capacity to adequately dissipate the energy of flow during flood flow conditions.

The 1:55 scale general model investigations indicated that the installation of flow deflectors would increase cross-flow velocities in the navigation channel and cause adverse tailrace conditions for adult fish passage. The solutions to these problems consisted of extending the north spillway flow training wall to improve adult passage conditions and to construct four large coffer cells to baffle the high velocity cross flow entering navigation channel, allowing outward bound tows to develop speed encountering the strong cross currents. Towboat associations partnered with us in defining solutions to the navigation problem.



Completion of construction required 3 years. The first year 1996 was planned to complete 8 deflectors. However, high water required spill operations during the in-water work window (limited from 1 September to 31 March). Steel bulkheads used to dewater the work area were lost. In 1997, the contract continued and the remaining 4 deflectors were completed without incident. In 1998, follow-up contracts included construction of the training wall extension and barge cells.

Total Dissolved Gas (TDG) measurements were conducted in 1997, 1998 and 1999 to assess performance changes at various levels of construction completion. The level of TDG exchange at Ice Harbor has been reduced significantly from a high of 170 percent of saturation to 132 percent of saturation as a result of the flow deflector installation.

SURFACE BYPASS AND COLLECTION -- Our most recent fish passage enhancement is the Lower Granite Surface Bypass and Collection Program and Removable Spillway Weir.

The dams on the lower Columbia and lower Snake rivers were originally designed to accommodate passage of adult salmon and steelhead in ladder systems. The adult systems utilize attraction water at several locations below the dams that attract adult fish that enter into stepped ladder systems, and then pass upstream above each dam. The adult systems have been successful, allowing the adult fish to easily pass the hydropower projects on their return from the ocean to destinations upstream of the dams.

Passage systems for juvenile steelhead and salmon were not adequately considered in the original hydropower project designs. The effects of dams on the downstream migrating juvenile fish were severely underestimated. Mortality, injury and delay of juvenile fish at the hydropower projects have been substantial. In an attempt to increase the passage success for the juvenile fish, many systems have been tested and implemented at the hydropower projects. Currently, the two most common methods of passing juvenile fish are spillways and turbine screen bypass systems. While relatively successful, both of these methods can have detrimental impacts on fish.

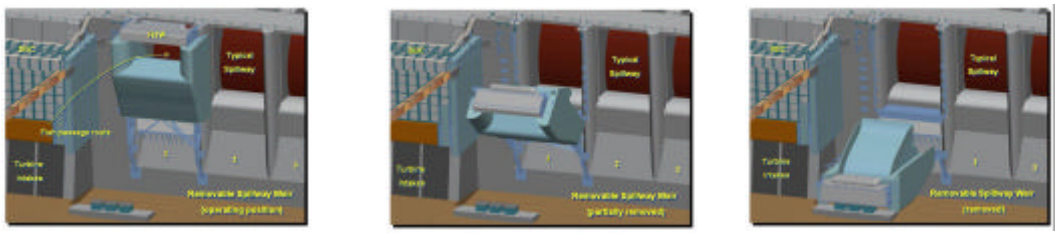
At Lower Granite Lock and Dam innovative ideas are being tested under the Surface Bypass and Collection (SBC) program. The primary objectives for developing and testing SBC technology was to increase the number of juvenile fish guided for bypass or collection through non-turbine routes, to reduce fish stress, injury, and migration delays. The program has also tested juvenile fish occlusion systems, which are intended to discourage fish attraction where considered detrimental, such as into turbine intakes. The SBC methods may increase fish passage success with reduced spillway flow. Reduced spill levels can potentially reduce levels of dissolved gas in the rivers. Spillway flow, unlike turbine flow, can elevate dissolved gas levels in the river below the dams. High gas levels are known to be harmful to fish and other aquatic life. If spill levels can be reduced and still provide acceptable juvenile fish passage below the dams, power generation may be enhanced as well.

The initial SBC prototype was constructed in 1996. The prototype consists of a 300-foot long floating steel “channel” installed upstream of the powerhouse, extending parallel across three of the six powerhouse turbine units (units 4, 5 and 6). The structure is designed with fish “entrance” intakes to attract juvenile fish into the SBC. The “outlet” of the channel is connected to an adjacent spillway to allow flow (and fish) into and through the structure. For testing purposes, the fish that enter the SBC are passed via the spillway. The SBC channel passes about 3400 cubic feet per second (cfs) of flow over the spillway. The design tested the concept of intercepting juvenile fish near the “surface” before they enter into the deep turbine intakes. The SBC is equipped with several mechanically operated fish entrances that are opened or closed, depending on the test protocol. This flexibility allows many different fish entrance configurations and flow variations for testing. Tests have been conducted every spring since 1996, and results indicate a high percentage of fish can be attracted into the SBC using a relatively low percentage of the river flow. The tests determined that fish are more attracted to shallower weir entrances, generally less than 25-feet deep. During most spring conditions, when the highest numbers of juvenile steelhead and salmon are present in the river, the SBC passed approximately 30-40 percent of the fish available using approximately 3-4 percent of the river inflow.

In 1998, the Behavioral Guidance Structure (BGS) was installed at Lower Granite. The BGS is testing the concept of discouraging juvenile fish passage by occluding, or blocking, passage into turbine intakes. Similar to the SBC, the BGS is also a temporary test structure designed to determine potential for more permanent applications at Lower Granite and other hydropower projects. The BGS is an 1100-foot long floating structure, with an 80-foot deep vertical “wall” intended to create a shoreline effect for the juvenile fish. The guidance structure tests the ability to reduce juvenile fish passage to

powerhouse units 1, 2 and 3. The wall connects to the powerhouse between units 3 and 4, then angles 1100-feet upstream skewed towards the shoreline. The new "shoreline" substantially reduces fish passage to powerhouse units 1-3. Over several years of tests, the BGS has demonstrated the potential to reduce turbine passage at units 1, 2 and 3 by 80-percent. The BGS can be deployed into position at the dam face for testing, then removed by engaging self-contained winch systems on the structure. The 5-million pound structure can be moved and stored 900-feet upstream within 12-hours. This capability was needed for initial testing to allow BGS "on" and "off" positions to measure actual performance. Potential applications are to utilize BGS systems at hydropower projects that pass juvenile fish via spillways, or to guide fish to bypass or collection systems.

In 2001, a "removable" Spillway Weir (RSW) is currently under construction, with initial tests planned for 2001 and 2002. The previous SBC tests have been extremely useful to determine actual biological performances of surface bypass under various flows, entrance configurations and project operations. The SBC testing has determined that surface flow provides the best attraction and highest effectiveness (fish passed per unit of flow) to pass juvenile fish. The RSW concept is based on results of the SBC testing at Lower Granite and will "surface" bypass juvenile fish at one spillway, over a raised crest. The existing eight spillways utilize tainter gates that pass water (and fish) underneath the gates at about 50-foot deep. When passing water beneath the gates, the flow is under high pressure, subjecting the juvenile fish to rapid pressure and velocity changes. The RSW will pass approximately 11-foot deep surface flow (6000-11000cfs) over a shaped weir, similar to a waterfall. The Lower Granite RSW is designed to be removable to return the spillway to design capacity if needed to pass a major flood event. If the RSW performs as intended, the structure will become an "operating" prototype with extended application for fish passage. See graphic depiction below which shows the RSW position change.



OTHER AREAS OF EXPERTISE -- In addition to fisheries engineering and environmental research geared to maintaining anadromous fish, the District has several other distinct, and on-going missions. For example, we have provided on-going support to Northwestern Division's seismic program through the earthquake hazards reduction program. Walla Walla District is also undertaking a bridge inspection program for the U S Forest Service, and cost evaluation estimates for the Department of Energy.

COST ENGINEERING -- Our Cost Engineering Branch prepares the Construction Equipment Ownership and Operating Expense Schedule for Corps-wide use. Many other federal and state agencies also use this publication. It provides a methodology for calculating construction equipment ownership and operating costs on an hourly basis by geographical region. Also, hourly rates for nearly 3,000 units of equipment are calculated and included in this publication. Expert consulting and assistance for methodology and calculation is provided for EP 1110-1-8 and on-site training for the EP 1110-1-8 methodologies is offered as requested. Construction equipment specifications and all past equipment pamphlets are maintained in our equipment library. The District provides the sole government source of technical data in construction equipment cost methodology in the MCACES

environment for the development of all planning, design and contract award cost estimates, as well as construction modifications and claims. Cost Engineering Branch also has the responsibility for preparation and guidance on the use the of the EM 111-2-1304, Civil Works Construction Cost Index System. Webpage: http://www.nww.usace.army.mil/cost.

ROLLER COMPACTED CONCRETE -- Walla Walla District pioneered Roller Compacted Concrete (RCC) construction in the Corps of Engineers. Willow Creek Dam was the first roller compacted concrete dam in the world. It was designed and built by Walla Walla District for Portland District to provide flood control for the city of Heppner, Oregon. RCC placement of approximately 403,000 cubic yards of RCC began on 29 April 1982 and was completed on 24 September 1982. Walla Walla District also designed and built Zintel Canyon Dam near Kennewick, Washington. The design and construction of RCC structures is being done routinely by public and private organizations. Several individuals from the Portland and Walla Walla Districts have formed an association to provide assistance to Corps and other federal organizations for the design and construction of RCC and mass concrete projects. To date, this group has assisted over 12 districts and 8 organizations on more than 40 RCC projects. The goal is to maintain a high level of capability in the Corps and make that capability available to organizations as needed.

HTRW -- The Walla Walla District also has expertise in hazardous and toxic waste cleanup and has partnered cleanup activities at the Department of Energy's Hanford Site near Richland, Wash., and most recently with Environmental Protection Agency and Seattle District at the Bunker Hill Superfund Site, Kellogg, Idaho.

SUMMARY -- Walla Walla District interacts with the region on a variety of political and environmental issues from endangered salmon to the image of the U.S. Army Corps of Engineers. Salmon and steelhead survival is a major environmental, cultural, and economic concern in the Pacific Northwest. Besides indicating health of the environment, these fish are important in the Indian cultures along the Columbia River, and support the sport and commercial fish industry in the region.

Walla Walla District is a full-service civil works organization. We have enjoyed working in virtual teams with members of other Corps' Districts and other federal agencies on a variety of engineering projects. If you would like additional information on any of these topics, please feel free to contact the office of the Chief, Engineering Division at 509-527-7500.

POC: SURYA BHAMIDIPATY, CENWW-EN, 509-527-7501

Return to Index of Articles

Update

GABION REPORT

The Philadelphia District has completed a three year long evaluation and monitoring study of a gabion basket revetment project comparing both welded wire mesh and double twisted wire mesh baskets. The 2500 foot long revetment was constructed in 1997 to provide erosion protection along the banks of the Cape May Canal at the southern tip of New Jersey. The first half of the length of the revetment was constructed using twisted mesh baskets, and the project was completed with welded wire mesh gabions. The intent of the study was to provide a report documenting the different aspects of installation and construction methods, and the overall performance and durability over the monitoring

period between the two types of gabion baskets. Headquarters USACE and North Atlantic Division were the driving forces behind the comparison and report.

The report concluded that in general, both halves of the revetment have fared about the same over the monitoring period of three years. Details about specific differences relating to durability are included, as well as suggestions on fine tuning manufacturer recommended construction methods that may improve the quality of the finished gabion products and in turn extend revetment life. The issue of "installation speed" between the two types of gabion baskets is also discussed. The report is meant to provide a practical, lessons learned perspective for those involved in specifying or administering contracts with one or the other type of gabion basket product. The full text of the report can be found at http://www.hnd.usace.army.mil/techinfo/CSSC/gabion.pdf.

POC: GIZELLA GEISSELE, CENAP-EN-DC, 215-656-6655

Return to Index of Articles

FEDERAL BUSINESS OPPORTUNITIES WEBSITE

On 16 May 2001, an interim change to the Federal Acquisition Regulation (FAR) designated the Federal Business Opportunities (FedBizOpps) website (http://www.fedbizopps.gov) as the single point of universal electronic public access to Government procurement opportunities. (The Federal register containing this interim rule is available at: http://www.access.gpo.gov/su_docs/fedreg/a010516c.html.) By 1 October, all agencies must use FedBizOpps to publicize procurement actions over $25,000 that are currently required to be published in the Commerce Business Daily (CBD). Between 1 October and 31 December, publication in both FedBizOpps and the CBD is required. On and after 1 January 2002, only publication in FedBizOpps is required. The synopsis format for FedBizOpps is the same as required for the CBD.

Your Contracting Division will be able to provide you more background on this important change in procurement practice. Also, since this is an interim change and public comments were requested (the closing date was 16 July 2001), the final FAR rule may be somewhat different. We will publish a follow-up article at a later date if there are any notable differences in the final rule.

POC: DON EVICK, CECW-ETE, 202-761-4227

Return to Index of Articles

DRAFT REGULATION ON PROFESSIONAL REGISTRATION AS A SELECTIVE PLACEMENT FACTOR

The Director of Human Resources is circulating a draft regulation on professional registration for comments. The text of the draft regulation (ER 690-1-1212) is printed below as part of this article. Please forward comments on the draft regulation to either Judy Rogers, CEHR-E, 202-761-1760 or Ray Navidi, CECW-E, (202) 761-4238 by 7 September 2001.

Text of Draft Regulation --

Civilian Personnel
Professional Registration As A Selective Placement Factor

1. Purpose. This regulation establishes U.S. Army Corps of Engineers (USACE) policy regarding professional registration for positions in the Engineers and Scientists (Resources & Construction) Career Program (CP-18).

2. Applicability. This regulation is applicable to all engineering[1] positions filled on a permanent or temporary basis in CP-18 employed by USACE. Positions covered by CP-18 are primarily involved with planning, design, construction, operation, maintenance, and repair of military facilities; cartography and geodesy; and in planning, design, construction, operation and maintenance of civil works projects; hazardous toxic waste remediation and installation restoration programs; and management of land, water, and related natural resources for public purposes and research in such fields.

3. References.

a. United States Office of Personnel Management (OPM), Operating Manual for Qualification Standards for General Schedule Positions – GS-800: All Professional Engineering Positions.

b. AR 690-950, Civilian Personnel – Career Management.

c. ER 1110-1-8152, Professional Registration.

4. Distribution Statement. Approved for public release; distribution is unlimited.

5. Background.

a. The USACE strategic vision is to be the world's premier public engineering organization. The mission of the Corps of Engineers is to provide quality, responsive engineering and environmental services to the Nation. To fulfill this mission requires the Corps to employ a world-class engineering workforce. Professional registration is an important measure of the competency of the USACE engineering workforce and is widely recognized by our customers and the public.

b. Registration (also called licensure) ensures a minimum level of technical competency and professional responsibility. Registration of private sector engineers, architects, landscape architects, surveyors, geologists, and related professions is required by states in order to safeguard life, health and property, and to promote the public welfare. Registration of Federal engineers, architects and related professions, although generally not legally required due to the doctrine of Federal Supremacy, is still essential for key positions to ensure the protection of life and property.

c. OPM qualification standards (reference 3.a.) authorizes professional registration as an appropriate selective factor for appointment to certain, typically high-level, engineering positions with duties and responsibilities that satisfy one of the following criteria:

(1) "Responsibility for final approval of designs of major structures and facilities involving public safety where such compliance with State laws meets an essential need of the engineering organization to provide objective evidence to agency management and the public that the work is performed by engineers of proven competence."

(2) "Responsibility for engineering determinations concerning contract awards or other major aspects of design and construction work to be performed by engineers in the private sector, where

[1] Engineering in the context of this ER includes all positions in job series 0801 through 0896, 1008, 1350, and 1370, 1372 and 1373.

registration is essential to have their full confidence and respect to achieve cooperation on critical engineering issues."

d. AR 690-950 and various outdated USACE policy memorandums identify engineering positions in USACE by specific title that require professional registration. With various HQUSACE reorganizations and the authority for subordinate commands to organize as appropriate for their missions, identification of positions by specific title, which require registration, is no longer a practicable approach. Hence, an important objective of this ER is to prescribe a USACE policy on registration requirements which is not dependent on position titles, and which is consistent with the OPM qualifications standards and AR 690-950.

6. Policy.

a. Professional registration is strongly encouraged for all USACE engineers, architects, landscape architects, surveyors, geologists and other relevant disciplines. Registration signifies a certain level of technical competence, substantial experience, proven ability, professional integrity, and high ethical standards. Professional registration gives greater credibility and weight to an individual's judgment and actions, both within professional circles and with the public at large.

b. Since it is likely that organizations and titles will continue to change, positions that require registration should not be codified in regulations by title. Job titles change frequently, and management loses flexibility in applying judgment to specific conditions that cannot be foreseen in advance. Also, regulating registration requirements by specific job title may unnecessarily restrict the pool of candidates because of changing conditions or duties associated with the jobs listed.

c. In addition to the positions whose titles and responsibilities equate to those listed in AR 690-950, Chapter 11, professional registration is also required as a condition of employment for senior-level (generally GS-13 and above) positions when one or more of the following duties and responsibilities are included in the position description:

(1) Final approval of engineering products and services when necessary to ensure the protection of life and property. (See ER 1180-1-8152 for USACE policy on approving design documents.)

(2) Providing authoritative regional, national or international engineering advice and determinations that could affect public safety.

(3) Authoritative interpretation and administration of construction contracts, such as the positions of Area Engineer and Resident Engineer.

(4) Developing engineering and construction policy, criteria and standards that could affect public safety.

(5) Representing the USACE Commander in relationships with professional associations, industry organizations, and government agencies on critical engineering and construction issues where registration is essential to achieve confidence, respect and cooperation.

Registration must be clearly identified as a selective placement factor in the vacancy announcement.

d. The required type of registration (engineering, architecture, surveying, geology, etc.) will be consistent with the principal duties, responsibilities and nature of a position. Registration may be in any State, Guam, Puerto Rico, or the District of Columbia. The individual's registration must be current and in good standing. Validation of current registration is the responsibility of supervisors for incumbent positions, and selecting officials and human resources offices when screening candidates for a vacancy.

e. When position descriptions include multiple functions, and engineering and/or construction functions are not a major portion of the duties and responsibilities, the next-level subordinate position(s) that is primarily responsible for engineering and/or construction will require appropriate professional registration.

f. Professional registration is required for temporary assignments to positions that would normally require registration. Since the temporary assignee assumes the duties, responsibilities and accountabilities of the position, the individual must be fully qualified to act in that position.

g. Registration requirements cannot be waived, except by the Functional Chief's Representative.

h. Obtaining and maintaining a professional registration is a personal expense. Payment is not authorized for professional certificates, licenses or examinations required to obtain such credentials. This is supported by Comptroller General Decision 22 CG 460, which states, in part, "…an officer or employee of the Government has upon his own shoulders the duty of qualifying himself for the performance of his official duties, and that if a personal license is necessary to render him competent therefore, he must procure it at his own expense." However, examination costs may be payable "when the cost of the examination is inextricably mixed with the cost of a program of training or when the examination process or when the examination process itself is designed to impart knowledge and skills to the examinee." See ER 1110-1-8152 for additional guidance on training related to professional registration.

-- End of Draft Regulation Text

Again, please forward comments on the above text to the POC shown below by 7 September 2001.

POC: RAY NAVIDI, CECW-E, 202-761-4238

Return to Index of Articles

CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS

We have been in the business of teaching our contractors how construction quality management is implemented under Corps of Engineers construction contracts for the last six or seven years. Each district is responsible for conducting this training and we have noted that Jacksonville District has a very good web site that tells their contractors when and where the training is going to take place and who to contact to get into the class. The site is located at: http://www.saj.usace.army.mil/conops/construction/cqm.htm. Jacksonville district has also taken the time to make sure the contractor personnel taking the course get credit for the training, which is required by the State of Florida, Construction Industry Licensing Board to maintain their licenses. Hats off to Jacksonville District Construction folks for a job well done.

Money has been requested in the FY02 budget to update the course and include the RMS requirements in it. We are also looking at the re-registration requirements for those contractor personnel whose certificate has expired. There will be more information coming on this subject.

POC: TERRY WILFORD, CECW-ETC, 202-761-5542

Return to Index of Articles

DESIGN OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES

Design guidance on Mechanically Stabilized Earth Walls and Reinforced Soil Slopes was published in EC 1110-2-311 on 31 July 2001.

The circular is to be used as interim guidance and criteria for the design of mechanically stabilized earth (MSE) walls and reinforced soil slopes (RSS) using geosynthetic reinforcement. The document supplements the National Concrete Masonry Association (NCMA) and Federal Highway Administration (FHWA) procedures for use on Corps of Engineers projects.

POC: HARI SINGH, CECW-EW, 202-761-8648

Return to Index of Articles

USAJOBS BY EMAIL

The various Corps of Engineers offices are continuing to announce a large number of positions each month. One of the best ways to keep up with the open vacancies is to USAJOBS by Email. This is a free service from the Office of Personnel Management. To establish a profile for the jobs that you would like to see go to http://profiler.usajobs.opm.gov. At this site you can register and establish a profile of jobs about which you would like to receive information. You will receive a message each day listing the new positions opened that day. This site is the most complete site for job announcements.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

Dam Safety

DAM SAFETY 2001 AND CORPS DAM SAFETY SEMINAR

The Association of State Dam Safety Officials (ASDSO) will hold their annual conference 9-12 September 2001 at Snowbird Resort, Snowbird Utah. The Corps of Engineers will hold a one-day seminar on 13 September 2001 at Homewood Suites, Midvale, Utah. We have arranged for rooms at Homewood Suites at the Government Per Diem rate.

ASDSO invites all those interested in the latest policy and technical information concerning dam safety in them and to attend Dam Safety 2001. Twenty-one technical sessions, an abundance of networking opportunities, and a truly inspiring mountain vista will make this one of the best conferences of the year. Dam Safety 2001 provides an outstanding return on your investment. Each full conference registration includes:

· More than 24 hours of educational instruction conducted by experts in at least 15 technical fields.

· Opportunities to network with over 600 dam safety professionals from the U.S. and several foreign countries

· A complete resources packet, including the Conference Proceedings on CD Rom, the participants list, an ASDSO Year-In-Review Newsletter, and an updated report on the Annual Survey of State Dam Safety Programs.

- Admission to all conference technical sessions, exhibit show and catered events.

For more information on Dam Safety 2001, see the ASDSO web site at http://www.damsafety.org/conferences.cfm?content=annual.

The Corps follow on meeting will be at the Homewood Suites in Midvale, Utah. We have a block of rooms reserved at the government per Diem rate of $75.00 (versus $124.00 at Snowbird). All Corps personnel attending the Dam Safety 2001 are encouraged to stay for the Corps Dam Safety Program Managers Conference on 13 September 2001. To make reservations at Homewood Suites for both the ASDSO Conference and the Corps meeting, call the hotel at 801-561-5999 and ask for Rebecca Bailey. The Group Code for making reservations is #87413474.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

Information

DIGITIZED TREAT ISLAND DATABASE

The Corps of Engineers Natural Weathering Exposure Station is located at Treat Island, Maine. This facility has been in service for more than 60 years. The harsh environment in this area makes this station the idea place for accelerated freeze and thaw test of concrete specimens. A significant amount of data has been accumulated during the past 60 years. This database maybe useful when selecting additives and aggregates in concrete that is subjected to freeze/thaw environment. Recently, WES completed the conversion of its database into digitized format and placed it on the Internet at http://www.wes.army.mil/SL/TREAT_ISL/index.html. The database includes pictures of the specimen showing the deterioration rat. Readers can compare the condition of the samples at different ages in a glance. The database will be updated periodically.

POC: M. K. LEE, CECW-EIV, 202-761-1518

Return to Index of Articles

Standard Form 330 for Architect-Engineer Qualifications

Sometime in August, proposed Standard Form 330, Architect-Engineer Qualifications, will be published in the Federal Register for public comment. This form, if adopted, will replace Standard Forms 254 and 255. The new form was developed by an interagency ad hoc committee, which included HQUSACE and was chaired by the General Services Administration. The new form has two parts: Part 1 – Contract-Specific Qualifications, and Part II – General Qualifications. In addition to consolidating the two present forms into one, the new form deletes duplicate information, expands essential information, eliminates information of marginal value, reflects current industry practices, and better facilitates electronic usage.

When the form is actually published in the Federal Register, we will send a notice by e-mail to each MSC A-E coordinator, who will in turn notify their subordinate districts. The comment period will be at least 60 days. Comments should be submitted to the address shown in the Federal Register notice,

not to HQUSACE. After all comments are received it will be a considerable period until all the comments are synthesized and the final form is issued. The final form will also be eventually published in the Federal Register with a future effective date. In other words, it may be about a year until the new SF 330 is actually in effect.

Make sure that you review the proposed form and provide any comments in a timely manner. Also, ensure that Programs and Project Management, Counsel, Contracting and other interested offices are aware of the proposed form.

POC: DON EVICK, CECW-ETE, 202-761-4227

Return to Index of Articles

Building Deconstruction and Reuse

Building deconstruction and reuse of building material is an important value in the SPiRiT evaluation, which we have now introduced as a mandatory element of the MILCON program. Reduction of construction and demolition waste in landfill sites is also a critical concern on some installations, like Fort Bragg - which has less than a 3-year life on its current site.

Several of us have been concerned about this issue, but I was unaware of progress on guidance until I got a note about a new PWTB. We now have guidance on this - PWTB 420-49-32. This publication can be found at http://www.hnd.usace.army.mil/techinfo/CPW/PWTB/4204930.pdf.

Please pass the word about this new publication. I don't think there can be too many media used (which is why I have included those of you who have a "channel".

My sensing at the time that I took the Military Programs PM course this spring is that not very many Districts or DPW are giving much thought to recycling buildings. The chief reason has been the high labor cost and tipping fees.

I have not had a chance to do more than scan the PWTB, but it appears to offer a thorough methodology for selecting the most feasible sustainable disposal action that meets other project criteria. Note that these instructions are issued as PWTB, which implies that they are primarily intended for installations; however, it would be applicable to many civil works buildings and similar structures as well.

POC: FREDRIK WIANT, CEMP-IP, 202-761-5788

Return to Index of Articles

Upcoming Regional and National Meetings and Conferences

INTERNATIONAL WORKSHOP ON EMERGENCY PREPAREDNESS AT DAMS

The Federal Energy Regulatory Commission and the Association of State Dam Safety Officials are co-sponsoring an International Workshop on Emergency Preparedness at Dams. This two-day workshop will be held in the Niagara Falls, New York area during the week of September 24, 2001. We will also attempt to coordinate an on-site tour of a nearby dam or power plant facility.

At this workshop, we plan to gather representatives from the United States and other countries to share ideas and discuss improvements to emergency preparedness at dams. This workshop will provide a forum for dam owners, regulators, and emergency preparedness personnel. We hope to improve emergency preparedness at dams and dam safety programs within the United States and internationally.

In general, the structure of the workshop will be a "conference" type format. Speakers will present talks of approximately 45-minute length over a two-day period. At present, we are considering four general session topics:

1. Emergency Response (local/state response, FEMA/NEMA, international trends).

2. Dam Owner Responsibilities (problem detection, preparation of emergency plans and coordination).

3. Advances in Technology.

4. Future of Emergency Planning (panel/discussion format)

Please let us know as soon as possible if you are interested in attending the workshop or have any special topics of concern, or suggestions for the program. Also let us know if you, or a colleague, are interested in giving a presentation at the workshop. The workshop itself and all printed materials will be free to participants. No abstracts or papers are required, however copies of presentations will be published for distribution to attendees.

For further information and registration information, please contact Mr. Frank Calcagno via email at frank.calcagno@ferc.fed.us or at (202) 219-2741.

POC: BOB BANK, CECW-EWW, 202-761-4243

Return to Index of Articles

RESTORING STREAMS, RIPARIAN AREAS, AND FLOODPLAINS IN THE SOUTHWEST: IMPROVING LANDOWNER ASSISTANCE; INCORPORATING SCIENTIFIC ADVANCES

A workshop sponsored by U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, USDA Natural Resources Conservation Service, Bureau of Reclamation, and Little Colorado River MOM. The workshop Director will be Jon Kusler, Associate Director, Association of State Wetland Managers; and the Onsite logistics coordinator will be Wendy Blackwell.

The workshop is scheduled for October 29-31, 2001 at the Crown Plaza Hotel, Albuquerque, New Mexico.

This training workshop is primarily for a technical and semi-technical audience including federal, state, tribal, and local agency staff (stream, wetland, riparian area, land management, and watershed management), environmental not for profit organization staff, and academic staff and students. Landowners and others will also be welcome.

The principal goal will be to build state, tribal, local government, federal, and private stream, riparian, and floodplain capabilities to restore streams, riparian areas, and floodplains in the Southwest. The overall question for the workshop is: “How can the effectiveness of stream, riparian areas, and floodplain restoration be improved?” More specific goals include:

- Apply scientific advances to restoration,
- Improve landowner assistance,
- Build local, tribal, state, and federal restoration partnerships including US/Mexican cooperation and cooperation with Indigenous Peoples, and,
- Recommend mechanisms for cooperative restoration on public, private lands, and tribal lands utilizing the Little Colorado Watershed Multiobjective Management Effort and other efforts.

For more information on the workshop contact the Institute for Wetland Science and Public Policy, The Association for State Wetland Managers, P.O. Box 269, Berne, NY 12023-9746, 518-872-1804; Fax: 518-872-2171; E-mail: aswm@aswm.org. Please visit their website at http://www.aswm.org for updates on the agenda and speakers.

POC: BEVERLEY GETZEN, CECW-PD, 202-761-4489

Return to Index of Articles

DAM SAFETY 2001

The Association of State Dam Safety Officials (ASDSO) will hold their annual conference 9-12 September 2001 at Snowbird Resort, Snowbird Utah. See Article under the Dam Safety Section on this issue of the newsletter.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

Training

TEAM BUILDING AND TEAM LEADERSHIP

This seminar focuses on the fundamental team skills necessary to work effectively in a team-oriented environment. The seminar examines how to apply basic team processes and tools to foster commitment, increase trust, empower people, and create synergy for accomplishing organizational goals. I attended this seminar several years ago and found it to be an excellent course.

Dates: September 17-21, 2001

Location: Western Management Development Center, Denver, Colorado

Learn more about this seminar at http://www.leadership.opm.gov/fs31.html. Contact the WMDC today at 304-870-8008 for space availability.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

MANAGEMENT DEVELOPMENT CENTERS AND FEDERAL EXECUTIVE INSTITUTE COURSES

The Office of Personnel Management has announced the launch of the FY 2002 website for the Management Development Centers and the Federal Executive Institute, at http://www.leadership.opm.gov.

The new site offers enhanced navigation, in-depth course descriptions, schedules and costs, and registration information on over 40 courses designed to assist America's leaders in developing the skills, competencies, and values that are the foundation of public service. Visitors can even take a

virtual tour of our three state-of-the-art residential learning environments in Denver, Colorado, Shepherdstown, West Virginia, and Charlottesville, Virginia, dedicated to serving the needs of high-performing supervisors, managers and executives.

For the latest, most up-to-date information on courses and seminars of OPM's Management Development Centers and the Federal Executive Institute, and to send a registration request on-line, go to http://www.leadership.opm.gov, and step up your own pace along The Leadership Journey.

You can also order your free FY2002 Course Catalogs at http://www.leadership.opm.gov.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

Open Discussion and Comments

No items for discussion were received this month.

(Editors' note: If you want to share your thoughts with our readers regarding a subject of general interest, send an email to the E&C News editor at charles.pearre@usace.army.mil. A synopsis of your comments will be published next time).

Editors' Notes

FUTURE THEMES

For individuals wishing to submit articles for future issues of the Engineering and Construction News, the themes for the next three issues are shown below:

September 2001	Infrastructure Conference
October 2001	TBD
November 2001	TBD

The Districts of the Month will be as follows:

September 2001	Vicksburg District
October 2001	Nashville District
November 2001	St. Paul District

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles

SUBSCRIBE TO ECNEWS

Engineering and Construction News uses a subscription list on the Corps List Server. The name of the list is LS-ECNEWS. The purpose of the list is to distribute the Engineering and Construction community newsletter, *Engineering and Construction News.*

You can subscribe or unsubscribe to LS-ECNEWS by sending an e-mail message to majordomo@ls.usace.army.mil with no subject line and only a single line of text in the message body. That single line of text should have the following format: **subscribe ls-ecnews** or **unsubscribe**

ls-ecnews. The List Server system will automatically pick up your originating e-mail address from the message and add it to or delete it from the distribution list.

If you have any questions about the list server, see the List Server E-Mail Delivery System web page at http://eml01.usace.army.mil/other/listserv.html. Or you may contact Charles Pearre if you have additional questions on the subscription list.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

Return to Index of Articles